



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/553,038

06/25/2008

Hideki Yoshinaga

00684.102862.

6783

5514

7590

02/03/2011

FITZPATRICK CELLA HARPER & SCINTO

1290 Avenue of the Americas

NEW YORK, NY 10104-3800

EXAMINER

CHOW, YUK

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

02/03/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,038	<b>Applicant(s)</b> YOSHINAGA ET AL.	
	<b>Examiner</b> YUK CHOW	<b>Art Unit</b> 2629	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/17/2005; 03/06/2007</u> .                                  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 5 and 6 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 4, 7 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 7 and 11, applicant claimed that “a plurality of scanning lines and data lines are disposed on substrate, and a plurality of coils disposed on said substrate.” However, applicant also claimed wherein said plurality of coils are disposed between “said substrate” and “substrate display device” in claim 4. This is unclear regarding the location of the coils. For the purpose of examination, the location of the coils to be interpreted as between its own substrate and display substrate.

### ***Claim Rejections - 35 USC § 103***

Art Unit: 2629

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keely, JR. et al (US 2002/0063694) in view of Ely et al (US 2002/0179339).

As to **claim 1**, Keely discloses a display apparatus, comprising:

a substrate comprising a metal layer (see Fig. 1(66)),

a plurality of scanning signal lines and a plurality of data signal lines which intersect with each other and are disposed on said substrate (see Fig. 1(38, 12)),

a display device which has a display element located at an intersecting position of said scanning and data signal lines and is driven by a voltage signal supplied to said scanning and data signal lines (see [0040]).

However, Keely's disclosure does not teach wherein a plurality of coils disposed in parallel with each other on digitizer substrate, and a circuit for detecting currents passing through said plurality of coils by the action of electromagnetic induction of an electromagnetic wave locally generated at a surface of the display device to determine a generation position of the electromagnetic wave by a position of said coils through which the currents pass.

Ely discloses a position sensor wherein teaches a plurality of coils (Fig. 2(13) and Fig. 3(31-37) disposed in parallel with each other on digitizer substrate (see Fig 7b, 31-1 and 31-2 are in parallel), and a circuit (Fig. 3, 63, 65, 69-1-8 and 71-1-8) for detecting

Art Unit: 2629

currents passing through said plurality of coils by the action of electromagnetic induction of an electromagnetic wave locally generated at a surface of the display device to determine a generation position of the electromagnetic wave by a position of said coils through which the currents pass (see [0061]-[0065]).

It would have been obvious to one ordinary skill in the art at the time of invention was made to incorporate inductive position sensing of Ely into the digitizer of Keely, because the sensing coil can be embedded behind the LCD, therefore this improve the display quality (see Ely [0003]-0004)).

As to **claim 2**, Keely and Ely disclose an apparatus according to claim 1, wherein said substrate is a metal plate (see Fig. 1(66)) .

As to **claim 3**, Keely and Ely disclose an apparatus according to claim 1, wherein said substrate is a metal layer coated with an insulating material (see Keely Fig. 1(64) and [0037]).

As to **claim 4**, Keely and Ely disclose an apparatus according to any one of claims 1-3, wherein said plurality of coils are disposed between said substrate and substrate display device (see Keely Fig. 1, digitizer layer 18 is disposed between display layer and digitizer substrate 64).

As to **claim 5**, Keely and Ely disclose an apparatus according to any one of claims 1-4, wherein said plurality of coils are provided in two layers which determine an X coordinate and a Y coordinate, respectively, of the generation position of the electromagnetic wave (see Ely Fig. 7c and 7d which determine an X and Y coordinate).

As to **claim 6**, Keely and Ely disclose an apparatus according to any one of claims 1-5, wherein said display device includes a pair of electrodes supplied with a voltage by said scanning and data signal lines, at least one of the electrodes being disposed on said substrate, and a medium which is disposed between the electrodes and contains therein charged particles (see Keely [0040]).

As to **claim 7**, Keely discloses a display apparatus, comprising:

a substrate comprising a metal layer which has an electromagnetic wave transmissive structure (Fig. 1(66)),

a plurality of scanning signal lines and a plurality of data signal lines (see Fig. 1(38, 12)) which are disposed on said substrate,

a display device which is disposed on said substrate in a matrix and is driven by a voltage signal supplied to said scanning and data signal lines (see [0040]).

However, Keely's disclosure does not teach a plurality of coils disposed, opposite from said display device, in parallel with each other on said substrate, and a circuit for detecting currents passing through said plurality of coils by the action of electromagnetic induction of an electromagnetic wave locally generated at a surface of the display device to determine a generation position of the electromagnetic wave by a position of said coils through which the currents pass.

Ely discloses a position sensor wherein teaches a plurality of coils (Fig. 2(13) and Fig. 3(31-37) disposed in parallel with each other on digitizer substrate (see Fig 7b, 31-1 and 31-2 are in parallel), and a circuit (Fig. 3, 63, 65, 69-1-8 and 71-1-8) for detecting currents passing through said plurality of coils by the action of electromagnetic induction

Art Unit: 2629

of an electromagnetic wave locally generated at a surface of the display device to determine a generation position of the electromagnetic wave by a position of said coils through which the currents pass (see [0061]-[0065]).

It would have been obvious to one ordinary skill in the art at the time of invention was made to incorporate inductive position sensing of Ely into the digitizer of Keely, because the sensing coil can be embedded behind the LCD, therefore this improve the display quality (see Ely [0003]-0004]).

As to **claim 8**, Keely and Ely disclose an apparatus according to claim 7, wherein the metal layer is a metal sheet provided with a through-hole (see Ely Fig. 7a and [0068]).

As to **claim 11**, Keely discloses an input apparatus, comprising:

a substrate comprising a metal layer (see Fig. 1(66)),

a plurality of scanning signal lines and a plurality of data signal lines (see Fig. 1(38, 12)) which intersect with each other and are disposed on said substrate,

a display device which has a display surface located at an intersecting position of said scanning and data signal lines and is driven by a voltage signal supplied to said scanning and data signal lines (see [0040]).

However, Keely's disclosure does not teach a pen which designates a position on the display surface and generates an electromagnetic wave locally at the designated position at the same time, a plurality of coils disposed in parallel with each other on said substrate, and a circuit for detecting a current passing through said plurality of coils by the action of electromagnetic induction of the electromagnetic wave locally generated at

Art Unit: 2629

the display surface with the pen to determine a generation position of the electromagnetic wave by a position of said coils through which the current passes.

Ely discloses a position sensor wherein teaches a pen (see fig. 1(5)) and a plurality of coils (Fig. 2(13) and Fig. 3(31-37) disposed in parallel with each other on digitizer substrate (see Fig 7b, 31-1 and 31-2 are in parallel), and a circuit (Fig. 3, 63, 65, 69-1-8 and 71-1-8) for detecting currents passing through said plurality of coils by the action of electromagnetic induction of an electromagnetic wave locally generated at a surface of the display device to determine a generation position of the electromagnetic wave by a position of said coils through which the currents pass (see [0061]-[0065]).

It would have been obvious to one ordinary skill in the art at the time of invention was made to incorporate inductive position sensing of Ely into the digitizer of Keely, because the sensing coil can be embedded behind the LCD, therefore this improve the display quality (see Ely [0003]-0004)).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keely and Ely in further view of Christensen, Sr. (US 6,229,259).

As to **claim 9**, Keely and Ely disclose an apparatus according to claim 7.

However Keely and Ely disclosure does not teach wherein the metal layer is a sheet comprising metal fiber woven into mesh.

Christensen discloses a display device wherein teaches woven polymer fiber (Fig. 1(11)).



It would have been obvious to one ordinary skill in the art at the time of invention was made to use metal fiber woven for substrate as in Christensen into display device of Keely and Ely, because woven fiber is a known material to flexible. Therefore, the display can retains operational performance with mechanical flexing.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keely and Ely in further view of Mitsui et al (US 5,220,444)

As to **claim 10**, Keely and Ely disclose an apparatus according to claim 7.

However, Keely and Ely disclosure does not teach the metal layer is a metal sheet provided with an unevenness.

Mitsui discloses a LCD device wherein teaches substrate layer to be uneven (See Fig. 6(44)).

It would have been obvious to one ordinary skill in the art at the time of invention was made to use uneven substrate layer as in Mitsui into display device of Keely and Ely, because this improve optical characteristic (see Mitsui Col. 2 lines 18-22).

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to YUK CHOW whose telephone number is (571)270-1544. The examiner can normally be reached on 8-6 M-TH E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quan-Zhen Wang can be reached on (571) 272-3114. The fax phone

Art Unit: 2629

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. C./

Examiner, Art Unit 2629

/Quan-Zhen Wang/

Supervisory Patent Examiner, Art Unit 2629